CLAIMS:

1. A computer system for managing data exchanges among a plurality of network nodes comprising:

a managed packet backbone server (MPBS);

at least one Customer Premises Equipment (CPE) node communicable with the managed packet backbone server (MPBS); and

at least one Application Service Provider (ASP)node communicable with the managed packet backbone server (MPBS),

wherein

the managed packet backbone server (MPBS) manages transactions among said at least one Customer Premises Equipment (CPE) node and said at least one Application Service Provider (ASP) node.

Sub A1

2. The computer system of claim 1 wherein the at least one Customer Premises Equipment (CPE) node registers with the managed packet backbone server (MPBS).

3. The computer system of claim 2 wherein the at least one Application Service Provider (ASP) node registers with the managed packet backbone server (MPBS).

4. The computer system of claim 3 wherein the managed packet backbone server (MPBS) issues an authentication key to the at least one Customer Premises Equipment (CPE) node it registers.

5. The computer system of claim 3 wherein the managed packet backbone server (MPBS) issues an authentication key to the at least one Application Service Provider (ASP) node it registers.

6. The computer system of claim 4 wherein the managed packet backbone server (MPBS) stores profile information pertaining to the at least one Customer Premises Equipment (CPE) node it registers.

Sub A1

7. The computer system of claim 5 wherein the managed packet backbone server (MPBS) stores profile information pertaining to the at least one Application Service Provider (ASP) node it registers.

8. The computer system of claim 6 wherein a request from the at least one Customer Premises Equipment (CPE) node to establish a session with the at least one Application Service Provider (ASP) node is managed by the managed packet backbone server (MPBS).

9. The computer system of claim 6 wherein a request from the at least one Customer Premises Equipment (CPE) node to establish a session with another Customer Premises Equipment (CPE) node is managed by the managed packet backbone server (MPBS).

10. The computer system of claim 8 wherein when the managed packet backbone server (MPBS) receives a request from the at least one Customer Premises Equipment (CPE)

node to establish a session with the at least one Application Service Provider (ASP) node, the managed packet backbone server (MPBS):

verifies that the Customer Premises Equipment (CPE) node has a valid authentication key,

sends a session request to the Application Service Provider (ASP) node,

receives a session token from the Application Service Provider (ASP) node, and

sends the session token to the Customer Premises Equipment (CPE) node.

Sub A1

11. The computer system of claim 10 wherein one of the at least one Customer Premises Equipment (CPE) nodes initiates a session with one of the at least one Application Service Provider (ASP) nodes by sending a session request to one of the at least one Application Service Provider (ASP) nodes including the session token obtained from the managed packet backbone server (MPBS).

12. The computer system of claim 11 wherein one of the at least one Application Service Provider (ASP) nodes verifies a received session token and establishes a session with one of the at least one Customer Premises Equipment (CPE) nodes if the session token is valid.

13. The computer system of claim 12 wherein one of the at least one Customer Premises Equipment (CPE) nodes sends a session initiation event message to the managed packet backbone server (MPBS) upon establishment of a session with

one of the at least one Application Service Provider (ASP) nodes.

14. The computer system of claim 13 wherein one of the at least one Customer Premises Equipment (CPE) nodes sends a session termination event message to the managed packet backbone server (MPBS) upon termination of a session with one of the at least one Application Service Provider (ASP) nodes.

Sub A17

15. The computer system of claim 14 wherein one of the at least one Customer Premises Equipment (CPE) nodes sends data pertaining to the number and type of data packets received during a session with one of the at least one Application Service Provider (ASP) node to the managed packet backbone server (MPBS).

16. The computer system of claim 15 wherein the managed packet backbone server (MPBS) calculates a fee based on the data pertaining to the number and type of data packets exchanged in a session.

17. The computer system of claim 16 wherein the managed packet backbone server (MPBS) bills an account associated with one of the at least one Customer Premises Equipment (CPE) nodes.

18. The computer system of claim 16 wherein the managed packet backbone server (MPBS) bills an account associated

with one of the at least one the Application Service Provider (ASP) nodes for the session.

19. A managed packet backbone server (MPBS) for managing data exchanges among a plurality of network nodes comprising:

a registration component responsive to said plurality of network nodes, for:

receiving registration requests from the network nodes;

obtaining and storing profile information pertaining to each network node; and

providing an authentication key to each network node,

a session establishment component responsive to said plurality of network nodes, for:

receiving a session request message from a first network node that wishes to establish a session with a second network node, said session request message including the authentication key associated with the first network node;

verifying the validity of the authentication key associated with the first network node;

sending a session request message to the second network node;

receiving a session token from the second network node; and

sending the session token to the first network node, and

Sub A1

a session reporting component responsive to said plurality of network nodes, for:

receiving packet metering data pertaining to the amount and type of data exchanged over a managed packet backbone network during a session between two network nodes; and

calculating a fee based on the packet metering data.

20. A Customer Premises Equipment (CPE) node comprising:
a registration component responsive to a server node, for:

sending a registration request to the server node; and

receiving an authentication key from the server node,

a session establishment component responsive to a server node, for:

sending a session request message to the server node, said session request message including the authentication key and the address of a network node that the Customer Premises Equipment (CPE) node wishes to establish a session with;

receiving a session token from the server node; and

sending a session request message to the network node that the Customer Premises Equipment (CPE) node wishes to establish a session with, said session request message including the session token, and

a session reporting component responsive to a server node, for:

Sub A1

sending data to the server node pertaining to the amount and type of data exchanged over the managed packet backbone network during the session.

21. An Application Service Provider (ASP) node comprising:

a registration component responsive to a server node, for:

sending a registration request to a server node; and

receiving an authentication key from the server node, and

a session establishment component responsive to a server node, for:

sending a session token to the server node; and

receiving a session token from a network node that wishes to establish a session.

22. A Customer Premises Equipment (CPE) node comprising:

a network interface that receives and distributes an integrated multi-media signal;

an applications processing engine that executes software applications resident on said node; and

a memory that holds software applications resident on said node and receives and stores data.

23. A Application Service Provider (ASP) node comprising:

a network interface that receives and distributes an integrated multi-media signal;

an applications processing engine that executes software applications resident on said node; and

a memory that holds software applications resident on said node and receives and stores data.

24. A computer program product for managing data exchanges among a plurality of network nodes, the computer program product having a medium with a computer program embodied thereon, the computer program product comprising:

computer program code for receiving registration requests from network nodes;

computer program code for obtaining and storing profile information pertaining to each network node;

computer program code for providing an authentication key to each network node;

computer program code for receiving a session request message from a first network node that wishes to establish a session with a second network node, said session request message including the first network node's authentication key;

computer program code for verifying the validity of the first network node's authentication key;

computer program code for sending a session request message to the second network node;

computer program code for receiving a session token from the second network node;

computer program code for sending the session token to the first network node;

computer program code for receiving packet metering data pertaining to the amount and type of data exchanged over a managed packet backbone network during a session between two network nodes; and

computer program code for calculating a fee using the packet metering data.

25. A computer program product for exchanging data among a plurality of network nodes, the computer program product having a medium with a computer program embodied thereon, the computer program product comprising:

computer program code for sending a registration request from a first network node to a server node; and

Sub A1

computer program code for receiving in the first network node an authentication key from the server node;

computer program code for sending a session request message from the first network node to the server node, said session request message including the authentication key and the address of a second network node that the first network node wishes to establish a session with;

computer program code for receiving in the first network node a session token from the server node;

computer program code for sending a session request message from the first network node to the second network node, said session request message including the session token; and

computer program code for sending, from the first network node, data to the server pertaining to the amount and type of data exchanged over the managed packet backbone network during the session.

26. A computer program product for exchanging data among a plurality of network nodes, the computer program product

having a medium with a computer program embodied thereon, the computer program product comprising:

computer program code for sending a registration request to a server node;

computer program code for receiving an authentication key from the server node;

computer program code for sending a session token to the server node; and

computer program code for receiving a session token from a network node that wishes to establish a session.

Sub A1

27. A method of managing data exchanges among a plurality of network nodes comprising:

registering network nodes;

maintaining profile information pertaining to the network nodes;

providing an authentication key to the network nodes;

receiving session request messages from network nodes that wish to establish sessions with other network nodes; and

responding to session request messages from network nodes that wish to establish sessions with other network nodes;

28. The method of claim 27 further comprising:

receiving packet metering data pertaining to the amount and type of data exchanged over a managed packet backbone network during a session between two network nodes; and

calculating a fee using the packet metering data.

29. A method of exchanging data between network nodes comprising:

sending a registration request to a server node; and

receiving an authentication key from the server node;

sending a session request message to the server node, said session request message including the authentication key and the address of a network node;

receiving a session token from the server node;

sending a session request message, said session request message including the session token.

30. The method of claim 29 further comprising:

sending data to the server node pertaining to the amount and type of data exchanged over the managed packet backbone network during the session.

31. A method of exchanging data between network nodes comprising:

sending a registration request to a server node;

receiving an authentication key from the server node;

sending session tokens to the server node; and

receiving session tokens from network node seeking to establish a session.

32. A computer readable data signal embodied in a transmission medium comprising:

a code segment comprising bandwidth information;

a code segment comprising network interface information;

a code segment comprising address information; and

a code segment comprising subscriber profile information.

33. A computer readable data signal embodied in a transmission medium comprising:

a code segment comprising information pertaining to the number of data packets exchanged in a session between two network nodes; and

a code segment comprising information pertaining to the type of data packets exchanged in the session.

34. A residential access node (RAN) comprising:

a hardware platform for interfacing peripheral equipment with a packet data network;

a software platform including a plurality of application programming interfaces; and

a RAN protocol for managing communications among a plurality of residential access nodes.

35. The residential access node of claim 34 wherein said hardware platform comprises:

network interface means;

storage means; and

an applications processing engine.

36. The residential access node of claim 34 wherein said software platform resides within said applications processing engine and comprises:

a plurality of application programming interfaces implemented according to OSI standards.

37. The residential access node of claim 34 wherein said RAN protocol manages the registration of the residential access node with a server.

38. The residential access node of claim 34 wherein said RAN protocol manages a session establishment of one residential access node with another residential access node.

39. The residential access node of claim 34 wherein said RAN protocol manages a session reporting of one residential access node with another residential access node.